

What is Claimed is:

1. Insulating tapes for insulating an electrical conductor comprising:
 - an inner conductive layer;
 - an outer conductive layer; and
 - a slip layer located between said inner conductive layer and said outer conductive layer, wherein said slip layer comprises a non-stick material coated porous glass tape, and wherein said slip layers allows for a difference of movement between said inner conductive layer and said outer conductive layer without damage to said insulating tape; and
 - a conductive interweave interwoven with said slip layer;
 - wherein the porosity of said slip layer is sufficient to allow an impregnation of a resin through said slip layer to said inner conductive layer;
 - whereby said slip layer is wrapped around said electrical conductor in an overlapping manner that allows said conductive interweave to maintain contact between said inner conductive layer and said outer conductive layer.
2. The insulating tapes of claim 1, wherein the thickness of said slip layer is between 2-6 mils (0.05–0.15 mm) without overlap.
3. The insulating tapes of claim 1, wherein said insulating tapes are impregnated with a resin after being wound around said electrical conductor.
4. The insulating tapes of claim 1, wherein said slip layer and said conductive interweave are wound around said electrical conductor in a half lap manner.
5. The insulating tapes of claim 4, wherein said half lap manner produces a vertical striping patten somewhat perpendicular to the axis of said electrical conductor.

6. The insulating tapes of claim 1, wherein the ratio of said conductive interweave to said slip layer is between 1:1 and 1:8 by surface area.
7. The insulating tapes of claim 1, wherein the ratio of said conductive interweave to said slip layer is between 1:2 and 1:4 by surface area..
8. The insulating tapes of claim 1, wherein said slip layer is approximately 30 mm wide.
9. The insulating tapes of claim 1, wherein said conductive interweave is approximately 0.59 inches (15 mm) wide.
10. The insulating tapes of claim 1, wherein said conductive interweave has a resistance of approximately 200 ohms per square.
11. The insulating tapes of claim 1, wherein said slip layer and said conductive interweave are machine wound around said electrical conductor.
12. The insulating tapes of claim 1, wherein said difference of movement is up to 0.5 inches (13mm).
13. The insulating tapes of claim 1, wherein said insulating tape maintains physical properties at temperatures of 155 °C.
14. A slip layer with conductive interweave for use in insulating tape on electrical conductors comprising:
 - a non-stick material coated porous glass tape; and
 - a glass conductive tape;
 - wherein said non-stick material tape and said conductive tape are interwoven in a manner such that said conductive tape transverses said slip layer such that said conductive tape is exposed on both sides of said slip layer;
 - wherein the ratio of said conductive tape to said non-stick material glass tape from 1:1 to 1:8 by surface area of said slip layer;

wherein the porosity of said a non-stick material tape is sufficient to allow an impregnation of a resin through said slip layer.

16. The slip layer of claim 14, wherein the thickness of said non-stick material layer is between 2-6 mils without overlap.
17. The slip layer of claim 14, wherein said non-stick material layer is approximately 30 mm wide
18. The slip layer of claim 14, wherein said conductive interweave is approximately 15 mm wide
19. The slip layer of claim 14, wherein said conductive interweave has a resistance of approximately 200 ohms per square.
19. The slip layer of claim 14, wherein the non-stick material in said non-stick material layer is Teflon®.
21. A method for wrapping of an electrical conductor comprising:
 - wrapping an inner conductive layer of glass tape around said electrical conductor;
 - wrapping a non-stick material coated porous glass tape interwoven with a conductive interweave glass tape around said electrical conductor over said inner conductive layer, wherein said slip layer is formed;
 - wrapping an outer conductive layer of glass tape around said electrical conductor over said slip layer;
 - impregnating said insulating tape with a resin that impregnates to said inner conductive layer through said non-stick material coated porous glass tape; and
 - curing said resin in said insulating tape;
 - wherein said slip layer is wrapped around said electrical conductor in an overlapping manner that allows said conductive interweave to

maintain contact between said inner conductive layer and said outer conductive layer;

wherein said slip layers allows for a difference of movement between said inner conductive layer and said outer conductive layer without damage to said insulating tape.

22. The method of claim 21, wherein said non-stick material coated porous glass tape and said conductive glass tape are machine wound on said electrical conductor